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## [CLAIMS]

1. A heat-sensitive lithographic printing plate precursor comprising  
a support having a hydrophilic surface and an oleophilic coating,  
5 provided on the hydrophilic surface, said coating comprising
  - an infrared light absorbing agent and
  - a polymer which comprises a phenolic monomeric unit wherein  
the phenyl group of the phenolic monomeric unit is  
substituted by a group having the structure -N=N-Q, wherein  
10 the -N=N- group is covalently bound to a carbon atom of the  
phenyl group and wherein Q is an aromatic group.
2. A lithographic printing plate precursor according to claim 1  
wherein Q is a group comprising at least one heteroatom.
3. A lithographic printing plate precursor according to claim 2  
15 wherein said heteroatom is a nitrogen, an oxygen or a sulfur  
atom.
4. A lithographic printing plate precursor according to claims 1, 2,  
or 3 wherein Q has the structure -A-(T)<sub>n</sub>  
wherein A is a mono-cyclic 5- or 6-membered aromatic group or a  
20 5- or 6-membered aromatic ring annelated with another ring  
system,  
wherein n is an integer, selected between 0 and the maximum  
available positions on the aromatic group A,  
wherein each T group is selected from -SO<sub>2</sub>-NH-R<sup>1</sup>, -NH-SO<sub>2</sub>-R<sup>4</sup>,  
25 -CO-NR<sup>1</sup>-R<sup>2</sup>, -NR<sup>1</sup>-CO-R<sup>4</sup>, -NR<sup>1</sup>-CO-NR<sup>2</sup>-R<sup>3</sup>, -NR<sup>1</sup>-CS-NR<sup>2</sup>-R<sup>3</sup>,  
-NR<sup>1</sup>-CO-O-R<sup>1</sup>, -O-CO-NR<sup>1</sup>-R<sup>2</sup>, -O-CO-R<sup>4</sup>, -CO-O-R<sup>2</sup>, -CO-R<sup>3</sup>, -SO<sub>3</sub>-R<sup>1</sup>,  
-O-SO<sub>2</sub>-R<sup>4</sup>, -SO<sub>2</sub>-R<sup>1</sup>, -SO-R<sup>4</sup>, -P(=O)(-O-R<sup>1</sup>)(-O-R<sup>2</sup>),  
-O-P(=O)(-O-R<sup>1</sup>)(-O-R<sup>2</sup>), -NR<sup>1</sup>-R<sup>2</sup>, -O-R<sup>2</sup>, -S-R<sup>2</sup>, -N=N-R<sup>4</sup>, -CN, -NO<sub>2</sub>,  
a halogenide or -M-R<sup>1</sup>, wherein M represents a divalent linking  
30 group containing 1 to 8 carbon atoms,

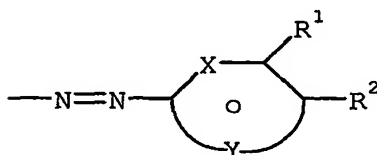
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wherein  $R^1$ ,  $R^2$  and  $R^3$  are each independently selected from hydrogen or an optionally substituted alkyl, alkenyl, alkynyl, cycloalkyl, heterocyclic, aryl, heteroaryl, aralkyl or heteroaralkyl group,

wherein  $R^4$  and  $R^5$  are selected from an optionally substituted alkyl, alkenyl, alkynyl, cycloalkyl, heterocyclic, aryl, heteroaryl, aralkyl or heteroaralkyl group,

or wherein at least two groups selected from each  $R^1$  to  $R^5$  together represent the necessary atoms to form a cyclic structure.

5. A lithographic printing plate precursor according to any of claims 1 to 3 wherein the  $-N=N-Q$  group comprises the following formula



wherein X is  $CR^3$ ,  $NR^4$  or N,

wherein Y denotes the necessary atoms to form a 5- or 6-membered aromatic ring, said atoms being selected from the group consisting of  $CR^3$ ,  $NR^4$ , N, S or O,

wherein each  $R^1$ ,  $R^2$  and  $R^3$  is selected from hydrogen, an

optionally substituted alkyl, alkenyl, alkynyl, cycloalkyl, heterocyclic, aryl, heteroaryl, aralkyl or heteroaralkyl group,  $-SO_2-NH-R^5$ ,  $-NH-SO_2-R^7$ ,  $-CO-NR^5-R^6$ ,  $-NR^5-CO-R^7$ ,  $-O-CO-R^7$ ,  $-CO-O-R^5$ ,  $-CO-R^5$ ,  $-SO_3-R^5$ ,  $-SO_2-R^5$ ,  $-SO-R^7$ ,  $-P(=O)(-O-R^5)(-O-R^6)$ ,  $-NR^5-R^6$ ,  $-O-R^5$ ,  $-S-R^5$ ,  $-CN$ ,  $-NO_2$ , halogen or  $-M-R^5$ , wherein M represents a divalent linking group containing 1 to 8 carbon atoms,

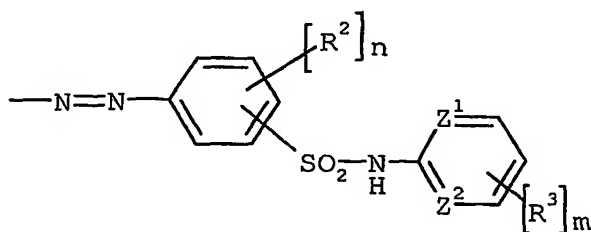
wherein  $R^4$ ,  $R^5$  and  $R^6$  are independently selected from hydrogen or an optionally substituted alkyl, alkenyl, alkynyl, cycloalkyl,

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heterocyclic, aryl, heteroaryl, aralkyl or heteroaralkyl group,  
 wherein  $R^7$  is selected from an optionally substituted alkyl,  
 alkenyl, alkynyl, cycloalkyl, heterocyclic, aryl, heteroaryl,  
 aralkyl or heteroaralkyl group,

or wherein at least two groups selected from each  $R^1$  to  $R^7$   
 together represent the necessary atoms to form a cyclic  
 structure.

6. A lithographic printing plate precursor according to any of  
 claims 1 to 3 wherein the  $-N=N-Q$  group comprises the following  
 formula



wherein  $Z^1$  and  $Z^2$  are independently selected from  $CR^1$  or N,

wherein  $R^1$  is selected from hydrogen or an optionally substituted  
 alkyl, alkenyl, alkynyl, cycloalkyl, heterocyclic, aryl,  
 heteroaryl, aralkyl or heteroaralkyl group,

wherein  $n$  is 0, 1, 2, 3 or 4,

wherein  $m$  is 0, 1, 2 or 3,

wherein  $R^2$  and  $R^3$  are independently selected from hydrogen, an  
 optionally substituted alkyl, alkenyl, alkynyl, cycloalkyl,  
 heterocyclic, aryl, heteroaryl, aralkyl or heteroaralkyl group,

$-SO_2-NH-R^4$ ,  $-NH-SO_2-R^6$ ,  $-CO-NR^4-R^5$ ,  $-NR^4-CO-R^6$ ,  $-O-CO-R^6$ ,  
 $-CO-O-R^4$ ,  $-CO-R^4$ ,  $-SO_3-R^4$ ,  $-SO_2-R^4$ ,  $-SO-R^6$ ,  $-P(=O)(-O-R^4)(-O-R^5)$ ,  
 $-NR^4-R^5$ ,  $-O-R^4$ ,  $-S-R^4$ ,  $-CN$ ,  $-NO_2$ , halogen or  $-M-R^4$ , wherein M  
 represents a divalent linking group containing 1 to 8 carbon  
 atoms,

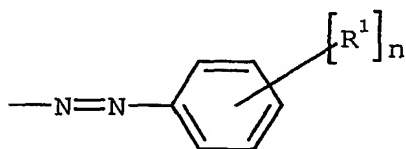
wherein  $R^4$  and  $R^5$  are independently selected from hydrogen or an

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optionally substituted alkyl, alkenyl, alkynyl, cycloalkyl, heterocyclic, aryl, heteroaryl, aralkyl or heteroaralkyl group, wherein  $R^6$  is selected from an optionally substituted alkyl, alkenyl, alkynyl, cycloalkyl, heterocyclic, aryl, heteroaryl, aralkyl or heteroaralkyl group,

or wherein at least two groups selected from each  $R^1$  to  $R^6$  together represent the necessary atoms to form a cyclic structure.

7. A lithographic printing plate precursor according to any of claims 1 to 3 wherein the  $-N=N-Q$  group comprises the following formula



wherein  $n$  is 0, 1, 2, 3, 4 or 5,

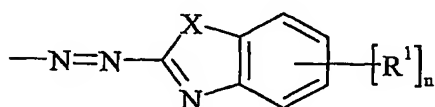
wherein each  $R^1$  is selected from hydrogen, an optionally substituted alkyl, alkenyl, alkynyl, cycloalkyl, heterocyclic, aryl, heteroaryl, aralkyl or heteroaralkyl group,  $-\text{SO}_2\text{—NH—R}^2$ ,  $-\text{NH—SO}_2\text{—R}^4$ ,  $-\text{CO—NR}^2\text{—R}^3$ ,  $-\text{NR}^2\text{—CO—R}^4$ ,  $-\text{O—CO—R}^4$ ,  $-\text{CO—O—R}^2$ ,  $-\text{CO—R}^2$ ,  $-\text{SO}_3\text{—R}^2$ ,  $-\text{SO}_2\text{—R}^2$ ,  $-\text{SO—R}^4$ ,  $-\text{P(=O)(—O—R}^2\text{)(—O—R}^3\text{)}$ ,  $-\text{NR}^2\text{—R}^3$ ,  $-\text{O—R}^2$ ,  $-\text{S—R}^2$ ,  $-\text{CN}$ ,  $-\text{NO}_2$ , a halogen or  $-\text{M—R}^2$ , wherein  $M$  represents a

divalent linking group containing 1 to 8 carbon atoms, wherein  $R^2$  and  $R^3$  are independently selected from hydrogen or an optionally substituted alkyl, alkenyl, alkynyl, cycloalkyl, heterocyclic, aryl, heteroaryl, aralkyl or heteroaralkyl group, wherein  $R^4$  is selected from an optionally substituted alkyl, alkenyl, alkynyl, cycloalkyl, heterocyclic, aryl, heteroaryl, aralkyl or heteroaralkyl group,

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or wherein at least two groups selected from each  $R^1$  to  $R^4$  together represent the necessary atoms to form a cyclic structure.

8. A lithographic printing plate precursor according to any of claims 1 to 3 wherein the  $-N=N-Q$  group comprises the following formula



wherein  $n$  is 0, 1, 2, 3 or 4,

wherein each  $R^1$  is selected from hydrogen, an optionally substituted alkyl, alkenyl, alkynyl, cycloalkyl, heterocyclic, aryl, heteroaryl, aralkyl or heteroaralkyl group,  $-SO_2-NH-R^2$ ,  $-NH-SO_2-R^4$ ,  $-CO-NR^2-R^3$ ,  $-NR^2-CO-R^4$ ,  $-O-CO-R^4$ ,  $-CO-O-R^2$ ,  $-CO-R^2$ ,  $-SO_3-R^2$ ,  $-SO_2-R^2$ ,  $-SO-R^4$ ,  $-P(=O)(-O-R^2)(-O-R^3)$ ,  $-NR^2-R^3$ ,  $-O-R^2$ ,  $-S-R^2$ ,  $-CN$ ,  $-NO_2$ , a halogen or  $-M-R^2$ , wherein  $M$  represents a

divalent linking group containing 1 to 8 carbon atoms,

wherein  $X$  is O, S or  $NR^5$ ,

wherein  $R^2$ ,  $R^3$  and  $R^5$  are independently selected from hydrogen or an optionally substituted alkyl, alkenyl, alkynyl, cycloalkyl, heterocyclic, aryl, heteroaryl, aralkyl or heteroaralkyl group,

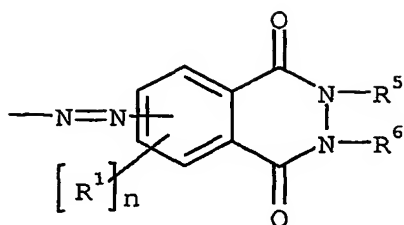
wherein  $R^4$  is selected from an optionally substituted alkyl, alkenyl, alkynyl, cycloalkyl, heterocyclic, aryl, heteroaryl, aralkyl or heteroaralkyl group,

or wherein at least two groups selected from each  $R^1$  to  $R^5$  together represent the necessary atoms to form a cyclic structure.

9. A lithographic printing plate precursor according to any of claims 1 to 3 wherein the  $-N=N-Q$  group comprises the following

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formula



wherein n is 0, 1, 2 or 3,

wherein each R<sup>1</sup> is selected from hydrogen, an optionally substituted alkyl, alkenyl, alkynyl, cycloalkyl, heterocyclic, aryl, heteroaryl, aralkyl or heteroaralkyl group, -SO<sub>2</sub>-NH-R<sup>2</sup>, -NH-SO<sub>2</sub>-R<sup>4</sup>, -CO-NR<sup>2</sup>-R<sup>3</sup>, -NR<sup>2</sup>-CO-R<sup>4</sup>, -O-CO-R<sup>4</sup>, -CO-O-R<sup>2</sup>, -CO-R<sup>2</sup>, -SO<sub>3</sub>-R<sup>2</sup>, -SO<sub>2</sub>-R<sup>2</sup>, -SO-R<sup>4</sup>, -P(=O)(-O-R<sup>2</sup>)(-O-R<sup>3</sup>), -NR<sup>2</sup>-R<sup>3</sup>, -O-R<sup>2</sup>, -S-R<sup>2</sup>, -CN, -NO<sub>2</sub>, a halogen or -M-R<sup>2</sup>, wherein M represents a divalent linking group containing 1 to 8 carbon atoms, wherein R<sup>2</sup>, R<sup>3</sup>, R<sup>5</sup> and R<sup>6</sup> are independently selected from hydrogen or an optionally substituted alkyl, alkenyl, alkynyl, cycloalkyl, heterocyclic, aryl, heteroaryl, aralkyl or heteroaralkyl group,

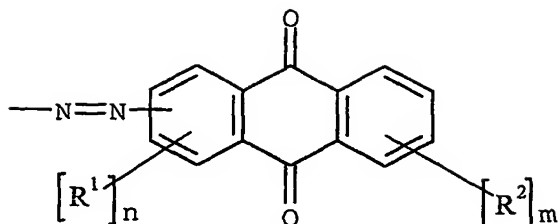
wherein R<sup>4</sup> is selected from an optionally substituted alkyl, alkenyl, alkynyl, cycloalkyl, heterocyclic, aryl, heteroaryl, aralkyl or heteroaralkyl group,

or wherein at least two groups selected from each R<sup>1</sup> to R<sup>4</sup> together represent the necessary atoms to form a cyclic structure,

or wherein R<sup>5</sup> and R<sup>6</sup> together represent the necessary atoms to form a cyclic structure.

10.A lithographic printing plate precursor according to any of claims 1 to 3 wherein the -N=N-Q group comprises the following formula

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wherein  $n$  is 0, 1, 2 or 3,

wherein  $m$  is 0, 1, 2, 3 or 4,

wherein each  $R^1$  and  $R^2$  are independently selected from hydrogen,

an optionally substituted alkyl, alkenyl, alkynyl, cycloalkyl, heterocyclic, aryl, heteroaryl, aralkyl or heteroaralkyl group,

$-\text{SO}_2-\text{NH}-R^3$ ,  $-\text{NH}-\text{SO}_2-R^5$ ,  $-\text{CO}-\text{NR}^3-R^4$ ,  $-\text{NR}^3-\text{CO}-R^5$ ,  $-\text{O}-\text{CO}-R^5$ ,

$-\text{CO}-\text{O}-R^3$ ,  $-\text{CO}-R^3$ ,  $-\text{SO}_3-R^3$ ,  $-\text{SO}_2-R^3$ ,  $-\text{SO}-R^5$ ,  $-\text{P}(=\text{O})(-\text{O}-R^3)(-\text{O}-R^4)$ ,

$-\text{NR}^3-R^4$ ,  $-\text{O}-R^3$ ,  $-\text{S}-R^3$ ,  $-\text{CN}$ ,  $-\text{NO}_2$ , a halogen or  $-\text{M}-R^3$ , wherein  $\text{M}$

represents a divalent linking group containing 1 to 8 carbon atoms,

wherein  $R^3$  and  $R^4$  are independently selected from hydrogen or an

optionally substituted alkyl, alkenyl, alkynyl, cycloalkyl, heterocyclic, aryl, heteroaryl, aralkyl or heteroaralkyl group,

wherein  $R^5$  is selected from an optionally substituted alkyl,

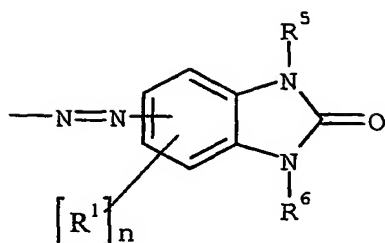
alkenyl, alkynyl, cycloalkyl, heterocyclic, aryl, heteroaryl, aralkyl or heteroaralkyl group,

or wherein at least two groups selected from each  $R^1$  to  $R^5$

together represent the necessary atoms to form a cyclic structure.

11.A Lithographic printing plate precursor according to any of claims 1 to 3 wherein the  $-\text{N}=\text{N}-\text{Q}$  group comprises the following formula

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wherein n is 0, 1, 2 or 3,

wherein each  $R^1$  is selected from hydrogen, an optionally substituted alkyl, alkenyl, alkynyl, cycloalkyl, heterocyclic, aryl, heteroaryl, aralkyl or heteroaralkyl group,  $-\text{SO}_2-\text{NH}-R^2$ ,  $-\text{NH}-\text{SO}_2-R^4$ ,  $-\text{CO}-\text{NR}^2-R^3$ ,  $-\text{NR}^2-\text{CO}-R^4$ ,  $-\text{O}-\text{CO}-R^4$ ,  $-\text{CO}-\text{O}-R^2$ ,  $-\text{CO}-R^2$ ,  $-\text{SO}_3-R^2$ ,  $-\text{SO}_2-R^2$ ,  $-\text{SO}-R^4$ ,  $-\text{P}(=\text{O})(-\text{O}-R^2)(-\text{O}-R^3)$ ,  $-\text{NR}^2-R^3$ ,  $-\text{O}-R^2$ ,  $-\text{S}-R^2$ ,  $-\text{CN}$ ,  $-\text{NO}_2$ , a halogen or  $-\text{M}-R^2$ , wherein M represents a

divalent linking group containing 1 to 8 carbon atoms,

wherein  $R^2$ ,  $R^3$ ,  $R^5$  and  $R^6$  are independently selected from hydrogen or an optionally substituted alkyl, alkenyl, alkynyl, cycloalkyl, heterocyclic, aryl, heteroaryl, aralkyl or heteroaralkyl group,

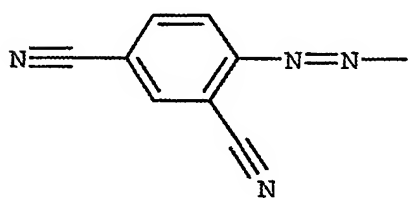
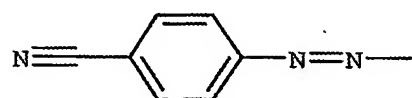
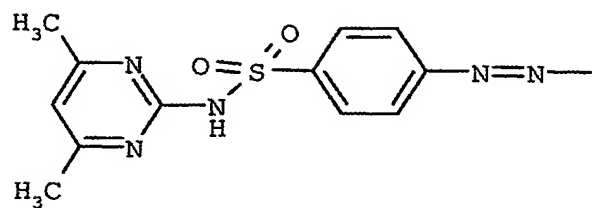
wherein  $R^4$  is selected from an optionally substituted alkyl, alkenyl, alkynyl, cycloalkyl, heterocyclic, aryl, heteroaryl, aralkyl or heteroaralkyl group,

or wherein at least two groups selected from each  $R^1$  to  $R^6$  together represent the necessary atoms to form a cyclic structure.

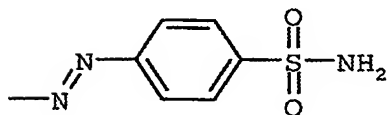
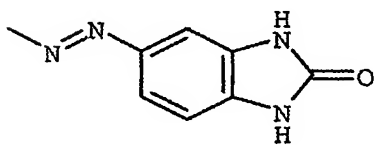
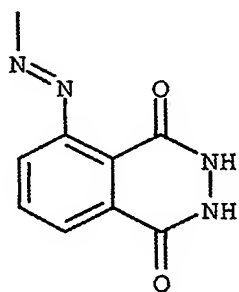
12.A lithographic printing plate precursor according to any of claims 1 to 3 wherein the  $-\text{N}=\text{N}-\text{Q}$  group comprises one of the following formula:



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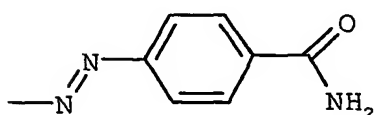
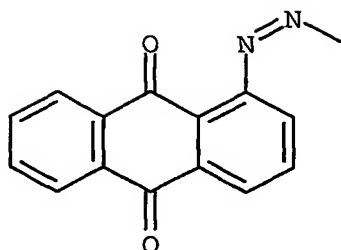


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- 5 13.A lithographic printing plate precursor according to any of the preceding claims, wherein said polymer comprising a phenolic monomeric unit is a novolac, resol or polyvinylphenol.
- 14.A lithographic printing plate precursor according to any of the preceding claims, wherein said coating further comprises a  
10 dissolution inhibitor and wherein said precursor is a positive working lithographic printing plate precursor.
- 15.A lithographic printing plate precursor according to claim 14, wherein said dissolution inhibitor is selected from
- an organic compound which comprises at least one aromatic group and a hydrogen bonding site, and/or
  - a polymer or surfactant comprising siloxane or  
15 perfluoroalkyl units .
- 16.Use of a polymer which comprises a phenolic monomeric unit wherein the phenyl group of the phenolic monomeric unit is substituted by a group having the structure -N=N-Q wherein the  
20 -N=N- group is covalently bound to a carbon atom of the phenyl group and wherein Q is an aromatic group, in a coating of a positive working heat-sensitive lithographic printing plate precursor, further comprising
- an infrared absorbing agent and  
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- a dissolution inhibitor,  
for increasing the chemical resistance of the coating against  
printing liquids and press chemicals.

17. A lithographic printing plate precursor according to any of  
5 claims 1 to 13, wherein said coating further comprising a latent  
Brönsted acid and an acid-crosslinkable compound and wherein said  
precursor is a negative working lithographic printing plate  
precursor.

18. Use of a polymer which comprises a phenolic monomeric unit  
10 wherein the phenyl group of the phenolic monomeric unit is  
substituted by a group having the structure  $-N=N-Q$  wherein the  
 $-N=N-$  group is covalently bound to a carbon atom of the phenyl  
group and wherein Q is an aromatic group,  
in a coating of a negative working heat-sensitive lithographic  
15 printing plate precursor, further comprising

- an infrared absorbing agent,
- a latent Brönsted acid and
- an acid-crosslinkable compound,

for increasing the chemical resistance of the coating against  
20 printing liquids and press chemicals.

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